385 approximately 264, 000 tons in 1952, was reported to be 400 per cent greater than the peak output under the Japanese, and production of ammonium sulphate in the same year was estimated at 170 per cent of the prewar peak.

Two other chemical manufacturers came on the scene at Tangku and Han-ku during the Japanese occupation. Taken over first by the Nationalists, then by the Communists, these firms, together with two other former Japanese concerns, have become through amalgamation the second largest chemical manufacturer in Tientsin. Production shortly after the Communist occupation included solid caustic soda, magnesium hydroxide, mag nesium chloride, sodium sulphate, cyanogin sulphide, hydrochloric acid, glue, bleaching powder soap, gypsum, salt, and bone meal.[33]

Outside Hopei, some chemical plants are believed to be under construction at Taiyuan. But Tientsin remains the center of North China's chemical industry as well as the major chemical production center outside Manchuria.

C. Cotton Textiles

•288 Heavy industry is gradually increasing in North China. In the meantime, however, further

33. Ibid.

1:Stanford U. S-4, 5 1956 AF12 North China AF12

288 expansion of the region's cotton textile industry has also been carried out under the Communist regime. This development has taken place on the basis of an existing textile industry, of which Tientsin is a major national center. It has been given particular impetus in this area because of the desire for self-sufficiency in the supply of cotton textiles, the cessation of cotton imports which is so fervently hoped for by the Communists and the consequent location of new cotton mills in areas close to cotton supply.

At the time of Communist occupation, North China accounted for about one-tenth of Mainland China's 5.1 million spindles and about 17 per cent of the country's 67,000 machine looms.[34] Since North China usually produces 40 per cent of Mainland China's raw cotton, it is only natural for the new mills to be located in North China, as well as in other cotton surplus areas. According to a compilation of data on new cotton mills,[35] of some 23 cotton mills established or under construction during 1951-54, Hopei accounted for six Construction of two additional mills is said to have started in Hopei during 1955.[36] In addition to Tientsin, other cities emerging as important textile centers are Shih-chia-chuang (4 new mills) Peking (3 new mills), and Han-tan (one new mill).

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34. Yuan-li Wu, op. cit., p. 305.

35. Ibid., p. 307.

36. China Daily News, New York, May 2, May 10, 1955.

288 It is planned that the new mills currently under construction will be equipped with about 100,000 spindles each, and thus will be considerably larger than the mills built before 1953. By the time all the new mills have been completed, North China will have doubled its cotton spindleage and will have a larger share of the Country's over-all textile production.

It should be noted that some of the textile machines installed in the new mills are being domestically produced and that, with the completion of the Ching-wei textile machinery plant in Shansi, an increasing volume of domestic textile machines will be available. Textile machinery may become the first group of machines in which mainland China will succeed in developing a modicum of self-sufficiency, and North China will be principally responsible for such a development.

H. Flour Mills

256 Next to cotton textiles, the most important modern light industry of North China is the flour industry. A survey in 1950 reported the existence in this area of 171 large and small modern mills, with a total 24-hour capacity of 86,000 bags, each weighing 48 lbs,[37] or over 16 per cent of the nati onal total. On the basis of the available

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37. Chung-kuo Kung-yeh [China's Industry] , Vol. II, No. 6, Shanghai, Oct. 1950, p. 4.

2: Gamble S-5 (1926-1933) 1954 -AF 12 North China AF 12

438 thirds of the male workers and 99.5 per cent of the female workers were engaged in home industry. The widespread hand spinning and weaving of the locally grown cotton accounted for the very large proportion of female workers. Over 60,000 were spinning, weaving, or both. Another 6,000 were engaged in other kinds of work. Eighty-eight per cent of the home industry workers were engaged in spinning, weaving, or both. About one-third of all females in the villages and some 8 per cent of the males were engaged in some form of home industry.

438 Because some families and workers were engaged in more than one
472 industry there was unavoidable duplication in the home industry figures for both families and workers. In determining the above figures
128 we have made allowance, on the basis of the actual duplication in 1,220 home industry families (see Chapter IV), for the known but necessarily estimated duplication in our hsien totals. In the 1,220 families the duplication was 27.5 per cent for the families, 10.5 per cent for the female workers, but only 1.1 per cent for the male workers. Spinning and weaving covered all but 2 per cent of the workers' duplications. In our industry tables we have not attempted any adjustment in the totals as the duplication can only be estimated. It must, however, always be kept in mind when the family and worker totals are considered.

In some cases it was difficult to make a sharp distinction between home and shop industry. The payment or non-payment of wages to the workers has been the chief determining factor. Home industry generally did not involve paid workers though they might be hired occasionally during especially busy times. Home industry generally was carried on in winter or other leisure time, but might be year round. Shop industry was generally year round, but might be seasonal. Apprentices were employed in some of the shops. Cotton ginning, which in some instances was done in the homes, has been listed as a shop industry as most of the workers were paid on a piece rate basis. Weaving was classified as a home industry although a few weavers were paid according to their output.

435 The value of the industrial output in 1931 was estimated to be
473 some $8,570,000. Fifty-seven per cent of this amount was produced by home industry. Cotton products were 56 per cent of the total. The
● [288] village shops produced more than four times as much as the city shops
369 but the city output per shop was almost twice that of the villages. The
438 average annual output per worker was city shops $890, village shops

2: Gamble S-5 (1926-1933) 1954 AF 12 North China AF 12

435 438 472

$380 per shop. The individual amounts ranged from $30 to $5,500. For 52 per cent of the shops the amount was less than $300. For 81 per cent it was less than $500. The average investment per worker was only $95.

The relatively small amounts of capital shown may be partly due to under-reporting, as the shop keepers naturally were hesitant about giving complete answers to our questions. At the same time it must be remembered that a very large proportion of the shops were in rented quarters. (Eighty-two per cent of the stores in the city rented their buildings and the figure for the shops was probably about the same.) Almost no machinery was used; most of the equipment was inexpensive hand tools; only a small labor investment was required as wages were low and most of the manufacturing processes were simple and short; inventories of finished goods usually were not large. The reported value of the goods produced represented a capital turnover of 9.5 times. The estimated profit was 2.8 times the total capital. Any under-reporting of capital would make these figures larger than actual. It should also be noted that 72 per cent of the total profit was earned by the eye medicine stores, whose estimated profit rate was 52 per cent of their output.

Profit figures for the individual village shops, if available, would undoubtedly be smaller than for the city. The average shop output was only 52 per cent of the city average. The average output per worker was $100, less than half the city average. The total estimated profit for the 1,578 shops was only one-third larger than the total for the 204 city shops. Cotton ginning with a 6 per cent profit was the largest item rather than eye medicine making. The average rate was only 9.1 per cent. For the city shops it was 29.6 per cent.

If the rate of capital turnover was the same in the villages as in the city the average capital for the village shops was $180 and the profit 100 per cent per year.

If, after making allowance for possible under-reporting of capital, the profit rates still seem unduly high, it must be remembered that interest rates on secured personal loans averaged some 21 per cent per year in 1931 and many of the stores paid 18 and 24 per cent per year for money left on deposit with them.

Cotton Ginning and Batting

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Cotton was the fifth Ting Hsien crop in value, $1,770,000. It was the largest money crop, as the other large crops, grains and sweet potatoes,

2: Gamble S-5 (1926-1933)1954 AF 12 North China AF 12

were largely consumed on the farms. Processing cotton was the chief local industry. Cotton products were 56.4 per cent of the industrial output and more than four out of every five industrial workers worked on cotton. The entire process was carried on with simple, usually locally made, hand or foot powered machines. The machine spun thread generally used for the warp of the locally woven cloth came from Tientsin or Shanghai.

Ginning was done on foot powered machines with which a man could process about 80 catties of lint a day. Most of the work was done on a piece work basis with the workers paid $1.10 per 100 catties in 1931, but only 75 cents in 1933. The ginning machines cost some $25. The ginning shops ordinarily made no cash charge for their work, but instead kept the seed from the ginned cotton. If the ginning was paid for in cash the charge was three or four cents per catty.

A considerable portion of the ginned cotton was teased into batting for use in bed quilts and padded winter clothing. This, too, was done on a foot powered machine. Again the average output was some 80 catties of lint per day. The price of the batting machines, according to one report, was some $40. Another report gave the cost as $75.

The batting used to be done by hand by working a vibrating wire through the cotton. The wire, stretched taut across a bow, was vibrated by hitting it with a wooden stick. In some shops the bow was hung from one end of a horizontal pole, the other end of which was fastened to the ceiling. The bending of the pole allowed the bow to be lowered into and worked across the cotton spread out on a flat table. In other shops the bow was hung from the free end of a curved stick that a harness held upright along the worker's back. The pole curved over the worker's head so that the bow hung in front of him. By bending he lowered the bow into the spread out cotton lint.

The 334 ginning and batting shops employed some 1,155 men and 144 women. They reported an output valued at $1,883,000. The estimated profit was only some 6 per cent, the lowest rate for any shop industry.

Store records and the memory of the workers gave us a history of the wages paid in the cotton ginning and batting shops for the 13 years from 1921 through 1933. There were six different series of rates, three different piece rates paid the men operating the ginning machines, the

2: Gamble S-5 (1926-1933) 1954 AF 12 North China AF

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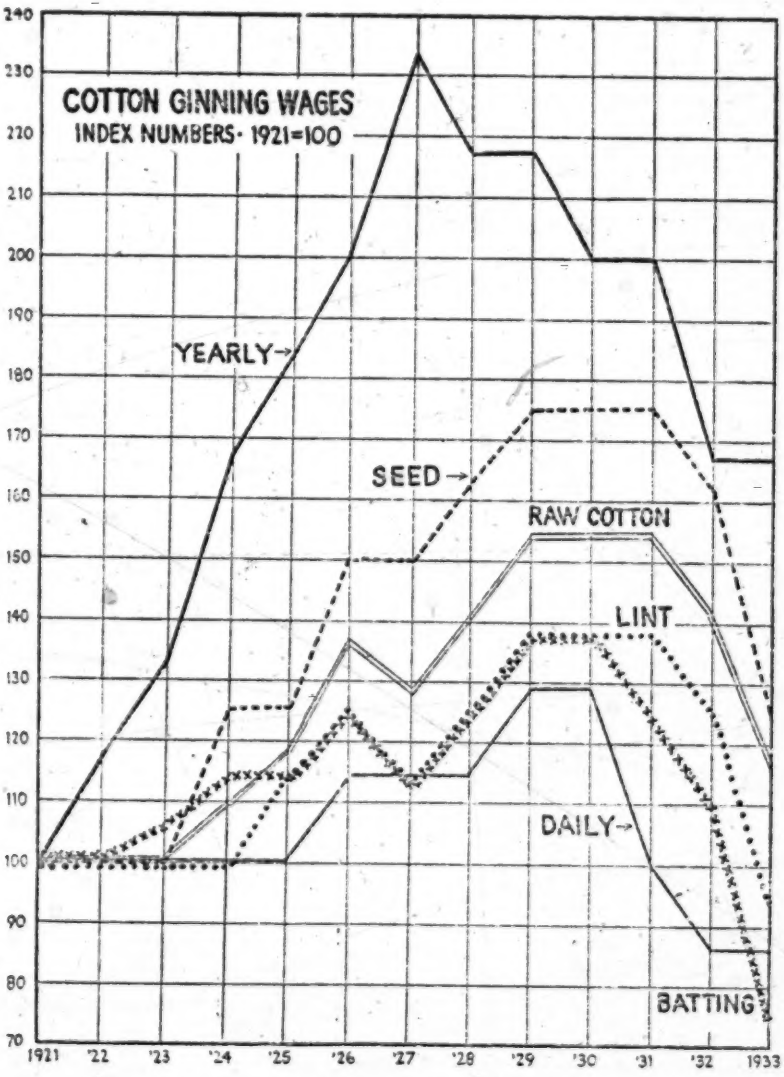

FIGURE 24. COTTON GINNING AND BEATING WAGES, INDEX NUMBERS, 1921–1933

2: Gamble S-5 (1926-1933)1954 AF 12 North China AF 12

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piece rate paid the batting machine operators, a day rate for temporary or seasonal workers, and a yearly rate for permanent employees.

The yearly rate varied from $30 to $70, the day rate from 30 to 45 cents. The average piece rate operator earned from 48 to 88 cents a day as an average day's work was processing 80 catties of lint and the piece rates varied from 60 cents to $1.10 per 100 catties of lint. Food was provided by the shop for the time workers but not for the piece workers.

The three ginning rates were based on processing 100 catties of raw cotton, producing 100 catties of ginned seed, and producing 100 catties of lint. The batting rate was for processing 100 catties of lint. There was a close relationship between the three ginning rates, for two-thirds of the seed rate plus one-third of the lint rate was regularly between one and two cents below the raw cotton rate. This would seem to indicate a general division of two-thirds seed and one-third lint for the Ting Hsien cotton.

The rates for ginning and batting 100 catties of lint were the same for eight of the 13 years. For some unexplained reason the batting rate was less than the lint ginning rate for the last three years of our study.

The index numbers of the six wage rates, with the 1921 rates equal to 100, are shown in Figure 24. The graphs for the piece rates show a fairly similar pattern, increases through the latter 1920s, a plateau for 1929–31, and then, as the depression reached Ting Hsien, a rapid decline to 1933. The decline was between 25 and 30 per cent for the ginning rates and 45 per cent for the batting rate. It will be noted from the graphs that the 1933 index number for ginning lint was 94, while that for batting lint was 79.

The fact that changes in the seed and lint rates were generally made in amounts of 10 cents per 100 catties accounted for most of the differences in the index numbers for the different piece rates.

The daily rate increased later than the piece rates, did not go as high proportionately, and started to decline a year earlier than the ginning piece rates. In 1933 the rate was 30 cents a day, or five cents (14 per cent) below the 1921 rate.

The yearly rate followed quite a different pattern. It increased every year for six years after 1921, reached a maximum in 1927 rather than in 1929, and showed two reductions before there was any decline in either the daily wage or the piece rate. The maximum, $70, was 2⅓ times the 1921 rate of $30. In 1932 and 1933 the yearly rate was $50.

2: Gamble S-5 (1926-1933) 1954 AF 12 North China AF 12

288 434 We could not find any reason that would explain why the 1933 index number was 167 for the annual wage, but only 86 for the daily wage; 125 for the highest ginning piece wage, but only 75 for the batting wage.

The yearly wage was 86 times the day rate in 1921, 175 times in 1927, and 167 times in 1933. During the 13 years covered by our figures there evidently was considerable improvement in the financial position of the yearly workers, at least when compared with that of the men who were paid by the day or on a piece rate basis.

Cotton Spinning

286 463 Most Ting Hsien families had a spinning wheel as part of their household equipment. Most of the girls and a few of the boys learned how to use it. The girls usually began spinning when they were 12 or 13 years old. Ordinarily it took them some four or five months to learn. During that time they practiced on "red" cotton. A new spinning wheel cost about 50 cents.

All but 16 of the 453 villages, 97.5 per cent, had at least one spinning family. One-third of the spinning villages had not more than 20. Just under two-thirds, 61 per cent, had not more than 50. Three had more than 300 and one had 360. The total number of spinning families was 28,367, an average of 65 per village. Forty-two per cent of all the village families had at least one member who was making thread.

The total number of spinners was 39,720. Almost 95 per cent of these were females, as only 2,106 male spinners were reported. Twenty-eight per cent of the females over 14 years of age were spinning. Only 55 villages reported any male spinners. All but six of those villages and all but 231 of the male spinners were in the 6th District. Three villages reported that all their spinners were males.

In most of the spinning families more than one person was doing some spinning. The average for the hsien was 1.4 per spinning family. In the 6th District it was 1.9. In eight villages, seven of which were in the 6th District, the average was over 2.5 per family while in three villages, all in the 6th District, it was three per family.

283 It was generally estimated that the women would spin one catty of thread in five days or from one market day to the next. This was borne out by the figures for the 67 spinning villages in the 1st District. There the village average per spinner ranged from 10 to 134 catties but for more than half the villages the average was between 20 and 30 catties

2: Gamble S-5 (1926-1933)1954 AF12 North China AF12

TABLE 97. WORKSHOPS IN CITY AND SUBURBS, 1931

	Shops	Workers	Output	Per Cent Gain
Cotton Ginning, Spinning, and Weaving				
Ginning	18	55	$ 70,890	9
Rope	5	17	5,490	15
	23	72	76,380	
Wool Spinning				
Rugs	1	7	2,590	20
	1	7	2,590	
Food				
Cakes and condiments	9	69	85,350	21
Condiments	1	4	1,470	16
Candy	4	14	2,370	12
Flour mill	31	84	61,980	9
Flour, green bean and noodles	6	22	8,280	10
—, green bean	2	4	1,610	15
Noodles	5	10	6,400	17
Oil, cotton seed and peanut	4	17	12,550	19
—, sesame	7	16	4,950	18
Vermicelli	5	19	18,800	8
	74	259	203,760	
Wood and Bamboo				
Bamboo implements	2	11	6,620	10
Bellows	1	1	200	20
Boxes and wardrobes	5	22	6,810	14
Carts	2	5	2,400	13
Furniture	4	13	4,160	14
Sedan chairs	3	9	2,780	16
Sieves and steamers	2	6	2,380	15
Timber yard	1	3	820	13
Umbrellas	1	4	2,590	11
	21	74	28,760	

(continued on next page)

2: Gamble S-5 (1926-1933)1954 AF12 North China AF12

TABLE 108. WAGES, COTTON GINNING AND BATTING, 1921–1933

Date	Daily Wage	Yearly Wage	Piece Rates[1] Ginning[2] Raw Cotton	Ginning[2] Seed	Batting Lint
1921	$0.35	$30	$0.55	$0.40	$0.80
1922	.35	35	.55	.40	.80
1923	.35	40	.55	.40	.85
1924	.35	50	.61	.50	.90
1925	.35	55	.65	.50	.90
1926	.40	60	.75	.60	1.00
1927	.40	70	.71	.60	.90
1928	.40	65	.78	.65	1.00
1929	.45	65	.85	.70	1.10
1930	.45	60	.85	.70	1.10
1931	.35	60	.85	.70	1.00
1932	.30	50	.78	.65	.80
1933	.30	50	.59	.50	.60

[1] Per 100 catties.

[2] Ginning rate per 100 catties of lint was generally the same as the batting rate. It varied from $0.75 to $1.10.

3:Chao E-5 (1939-1941)1948 AF12 North China AF12

one of the duck-raising families has a brother in the village who is a good farmer. Members of the families of these two brothers seldom see each other in spite of their kinship tie.

The woolen factory in the market-town attracts several female- as well as male-workers from this village. Several sons of P'ing-chiao-tsun families have also been attracted to the city factories. But so far the effect of industrialization upon family life is not observable. Perhaps the time is still too short for these families to feel the effect. Also recently, a Mr. Y- has brought into the village a few machines for woolen manufacture. Workers, males and females, adults and children, are attracted from P'ing-chiao-tsun itself and other villages. Industrialization is surely taking place, and another couple of years will tell its effects.

As to consumption habits, the village folks have begun to smoke cigarettes from city factories. The cloth for clothing is no longer home-spun but comes from city factories as well. The tea-leaves and the household utensils come from places far away. P'ing-chiao-tsun has no electric light and its people cannot afford to visit movie houses. Members of the upper family are exceptions, but their habits and manners have no effect on the rest.

Naturally, the school and the political bodies, previously mentioned, are agents of urbanization. Our student- and faculty-investigators are also urban agents. While we do not look queer to the villagers, nevertheless they are interested in our habits of living and very often keep on asking for details about them.

The last but not the least important is the changing conception of time in the minds of the villagers. While time-clocks may still be regarded as decorations, the people have begun to use them to count their time in hours if not in minutes. The three counts of morning, afternoon and evening are getting too simple for them.

Meanwhile, the city of Peiping is changing toward an industrial urbanism. Thus the process of urbanization in P'ing-chiao-tsun is both old and new. While the residents of the city might have abandoned their old ways, the village folks may still keep them. But the new ways are surely coming, slow as they may be. The structure of this village may be different from that of an American rural community,[29]

29 Charles J. Galpin, Rural Life, New York, 1923; J. H. Kolb and Edmund de S. Brunner, A Study of Rural Society: Its Organization and Changes, Boston and New York, 1940.

4: Burgess E-4.5 (1926-1927) 1928 AF12 North China AF12

(7) With the increasing use of foreign-style caps, straw hats and other Western headgear, the Hat Guild found diminishing sale for its products, the old-style Chinese skull-caps. This guild has consequently had no meetings for several years.

b. In some cases in which products formerly sold exclusively in China are now exported in large quantities, the home guild loses its power and disintegrates. We fortunately have a very careful analysis at hand of the break-up of the Peking Rug Guild.[1] Probably the main reason for the disappearance of this guild was the fact that when the foreign buyer wished to purchase rugs in large quantities the prospect of very large profits to individual rug merchants induced the latter to disregard guild regulations. Another circumstance which complicated the situation was that two large rug factories were organized by Westerners who were in close contact with the foreign market and who, naturally, had no interest in the native Chinese guild. The largest Chinese rug manufactory in the city was managed by foreign educated Chinese who, because of knowledge of English and personal connections, found it easy to deal directly with the buying agents of large American stores. This firm controlled the output of a large proportion of the small rug shops of the city. As foreign trade increased the former small shop system gave place to larger manufacturing units. Eleven of the 206 shops in Peking employed 1,035 of the total 1,768 journeymen in the entire industry.

In 1914 the rug industry had developed to such an extent that a number of the owners of shops felt the need of a protective organization. Chi Chang-yun, one of the oldest rug manufacturers in Peking, was instrumental in its formation. Of the immediate effect of this on the industry, the Government Bureau of Economic Information (Bulletin No. 12, Series,

[1] Chu and Blaisdell, *op. cit.*, pp. 16-18.

4: Burgess E-4, 5 (1926-1927) 1928 AF12 North China AF12

March 10, 1922) says; "The regulations that were drawn up stated a uniform price of $4.50 per square foot of 90 threads to the foot. This ruling was respected for more than a year, but gradually some manufacturers, out of self-interest, disregarded the provisions and reduced prices when opportunities for increased business presented themselves. . . . Out of 354 members only 40 have remained in the organization." Since that time the guild has further disorganized, and today operations are practically suspended.[1]

An analysis of the failure of this original Rug Guild shows the principal factors leading to its dissolution to be as follows:

(1) Self-interest on the part of the large rug factory owners.

(2) The establishment by the guild of a selling rate per foot which was far from what could be called a "competitive rate" and which could not be maintained without monopoly control impossible to establish.

(3) Lack of means of enforcing decisions. It set a certain standard for both prices and qualities of rugs, but the individual merchant frequently used a poor quality of wool. There was no way the guild could enforce its decisions except by expelling the member from the guild, and this was not effective because the organization was not strong enough to prevent him from starting up independently.

(4) The lack of any benefit to the skilled worker in connection with the guild. With the coming of the large factory units the old face-to-face relationship between employer and employee lost its former significance and the journeyman had no longer any important part in the common deliberations of the group. The four largest rug factories employed respectively 120, 145, 190 and 240 men where formerly groups included from 6 to 24 workers.

[1] Chu and Blaisdell, *op. cit.*, pp. 16-17.

4: Burgess E-4.5 (1926-1927) 1928 AF12 North China AF12

*441 Further details of this disintegration follow:

*467 The meetings, formerly held every month, have been discon-
439 tinued. Old apprenticeship rules hold and boys are still ex-
288 ploited, so that the phrase "three years and one festival," which is the length of their term, often results in an extension to four years by the addition of time penalties before completing apprenticeship. These apprenticeship rules no longer hold as guild rules, but as a personal contract between the guarantor of the apprentice and his employer. A few owners have broken away from these practices and now pay the apprentices small amounts.

As the industry now exists in Peking, neither the workers nor the employers have any type of protective or cooperative organization. Individualism is rampant. The exploitation of laborers, the working of small shop managers on a small margin, and free competition in the export field are likely to continue until there is some form of organization to exercise control.[1]

*441 c. Some guilds disappear when foreign factories estab-
*467 lished in China produce more efficiently and cheaply what was formerly made by the guild.

In reply to an inquiry sent to the Government Bureau of Economic Information in Peking regarding what happens to guilds when modern factories begin to produce by machinery what was formerly the product of the guild, we received from Mr. M. A. Gilbert the following information, in a letter dated February 21, 1928:

Nobody in Shanghai industries can give a definite answer to this question. According to those who have made studies in Shanghai labor, the disappearance of guilds seems to have begun 6 or 7 years ago. Many Shanghai factories came into existence long before that. So it is hardly correct to say that the factories caused their disappearance. The appearance of modern factories drove many workshops out of existence, and when these

[1] Chu and Blaisdell, pp. 17-18.